

Banking Economics

Lecture 8

The Importance of Banking Intermediation

João Afonso Saraiva Coelho

Faculty of Economics, University of Coimbra, Portugal

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(Slides adapted from Fátima Sol Murta and João Ricardo C.)



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Outline, Goals, and Main Bibliography

► Outline:

2. The importance of banking intermediation

2.1. Financial decision-making and the contribution of banking intermediation to economic agents' welfare.

2.2. The economic justifications for the existence of banks.

► Goals:

Formalize, using an intertemporal resource allocation model, the contribution of financial intermediation to the well-being of economic agents.

Identify the reasons that economic theory provides for the existence of financial intermediaries in general, and banks in particular, and recognize the contribution of banks to the proper functioning of the economy.

► Main Bibliography:

Matthews, K., & Thompson, J. (2005). *The Economics of Banking* (3rd ed.). John Wiley & Sons. (Chapter 2)

Determination of the Market Rate of Interest

- ▶ In the previous set of slides, we treated the interest rate, r , as exogenous.
- ▶ In other words, we assumed its value was fixed and did not explain how it was determined or where it came from.
- ▶ Now, our goal is to study the formation of the market interest rate through the lens of the Classical (pre-Keynes) Theory of Saving and Investment, specifically in its Loanable Funds Theory version.

Determination of the Market

Rate of Interest (cont.)

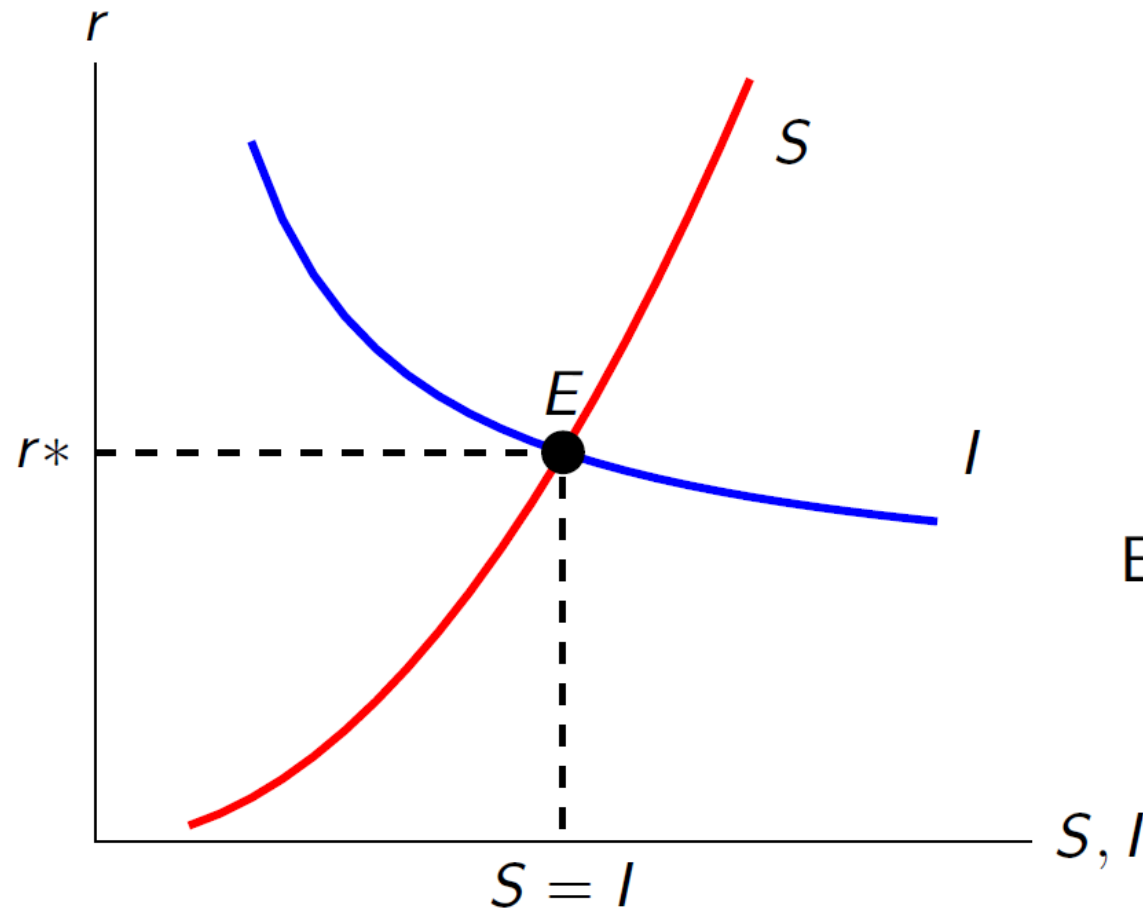
- ▶ One of the principles underlying this theory is the separation of the investment-production decisions from the savings-consumption decisions, which is a reality in developed economies.
- ❖ Saving decisions are made by surplus economic agents (usually households) whose income exceeds expenditure, with the aim of increasing future consumption;
- ❖ Investment decisions are made by economic agents in deficit (usually firms) with the aim of achieving a higher level of output and future income.

Determination of the Market Rate of Interest (cont.)

- ▶ Savings and financing needs meet in the **capital market**, where the **interest rate** is **determined**.
- ▶ The **interest rate** is equal to the relationship between the **interest** and the **capital** that generates it.
- ▶ Like other prices, it performs a **resource allocation** and **rationing** function. For each value of the interest rate, there will be households that wish to **shift present consumption** to **future consumption**, and there will be investments that are **feasible** and that generate the **required payment**.

Determination of the Market Rate of Interest (cont.)

- The equilibrium rate of interest determined by the interaction of savings and investment decisions by agents in the capital market.



$$S = S(r), \quad S'(r) > 0$$

$$I = I(r), \quad I'(r) < 0$$

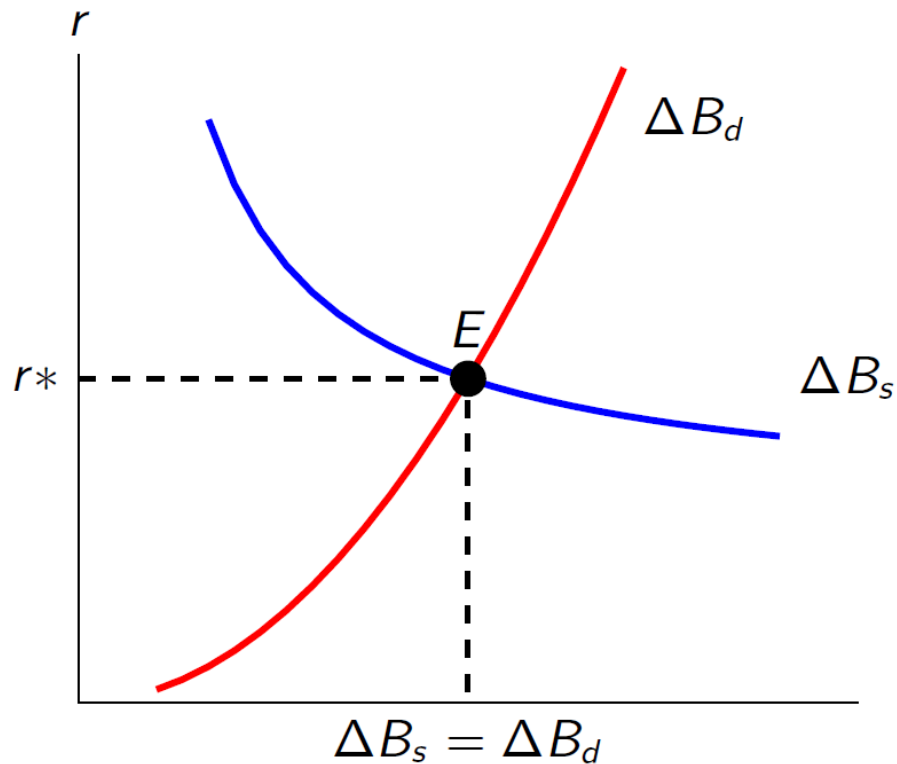
$$\text{Equilibrium : } S(r) = I(r)$$

Determination of the Market Rate of Interest (cont.)

- ▶ In the **Loanable-Funds-Theory** version of our model, the financial counterpart to the savings and investment decision is the flow supply and demand for financial securities. In particular:
 - ❖ On the supply side, we have firms willing to borrow funds by issuing new securities (equity, bonds, commercial paper) to invest in projects with a positive rate of return.
 - ❖ On the demand side, households will channel savings by demanding new securities to add to their portfolio of assets.
- ▶ So, savings represent the flow demand for securities (ΔB_d) and investment represents the flow supply of securities (ΔB_s) where Δ is the change in the level of stock, B represents the stock of bonds as a proxy for all securities and the subscripts represent demand and supply.

Determination of the Market Rate of Interest (cont.)

- Thus, we can adapt our previous framework to the following:



$$S = \Delta B_d = f(r), \quad f' > 0$$

$$I = \Delta B_s = g(r), \quad g' < 0$$

Equilibrium : $\Delta B_d = f(r) = \Delta B_s$

The inverse relationship between r and $P_{t,n}$

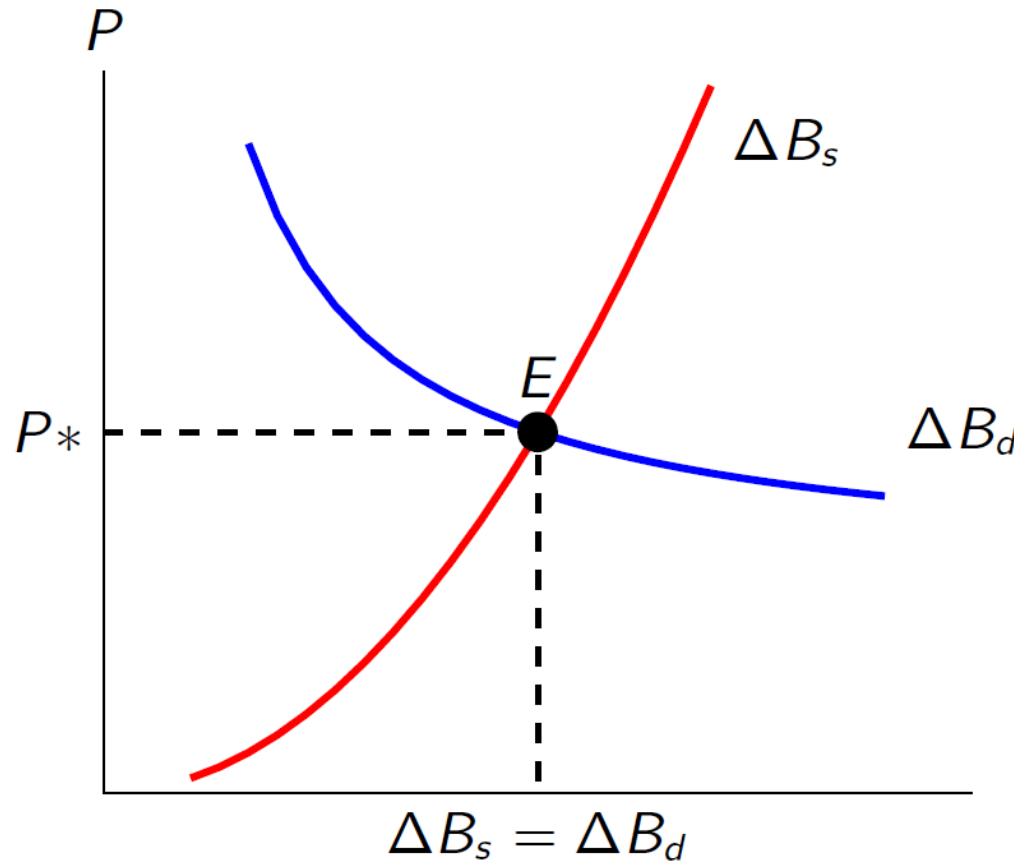
- ▶ Let's now further develop our framework and **adapt** it to **deal** with the **prices of traded securities** rather than their underlying yield (interest rate). With this goal in mind, we must remind ourselves of the link between securities' **prices** (P) and their **interest rate/yield** (r).
- The intrinsic value of a security or **price equilibrium** is the **present value of all expected future cash flows, discounted** at the appropriate **discount rate**.

$$P_{t,n} = \sum_{\tau=1}^n \frac{C_{\tau}}{(1+r)^{\tau}} + \frac{VR}{(1+r)^n} = \frac{C}{(1+r)} + \frac{C}{(1+r)^2} + \dots + \frac{C}{(1+r)^n} + \frac{VR}{(1+r)^n}$$

- ▶ Underlying this formula is an **inverse relationship** between the discount rate (**interest rate**) and the **price of securities**.

Determination of the Market Rate of Interest (cont.)

- Given this inverse relationship between the interest rate and the price of securities, our previous graph, as we substitute r with P , becomes:

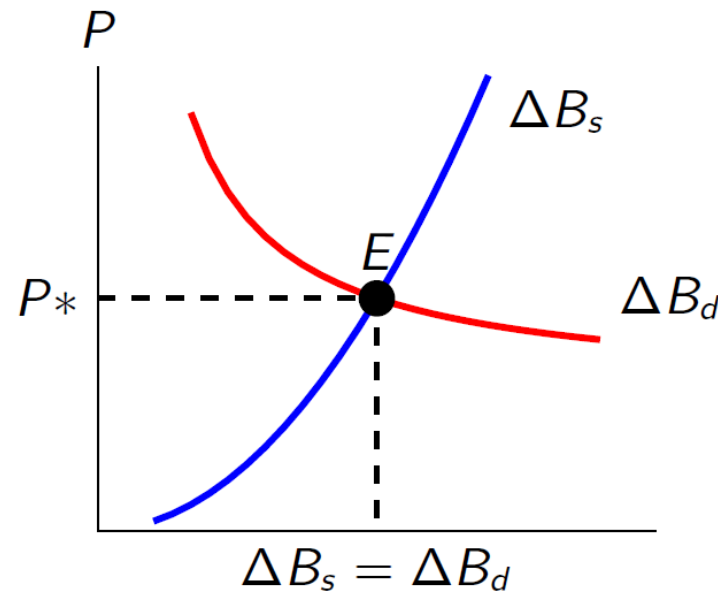
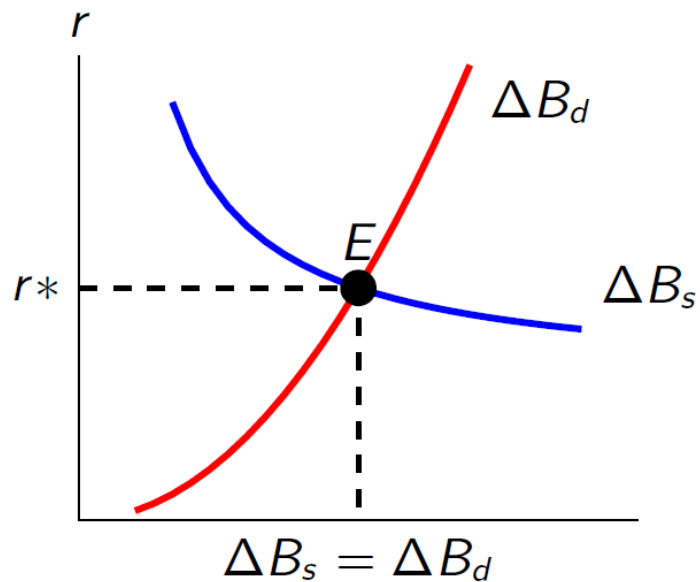


Determination of the Market Rate of Interest (cont.)

Main takeaways:

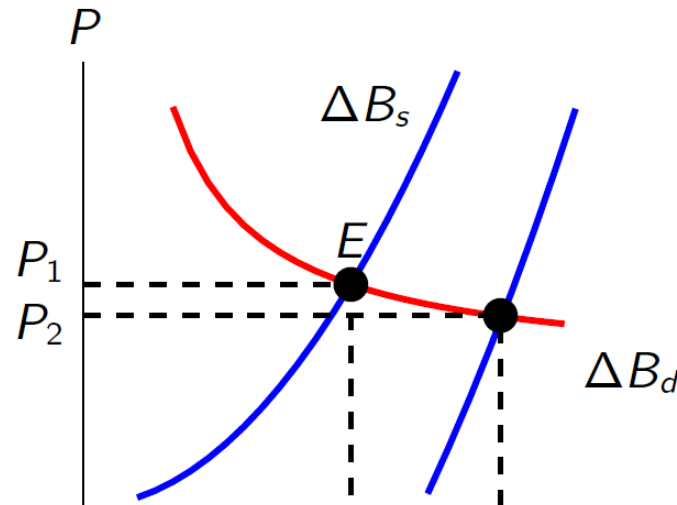
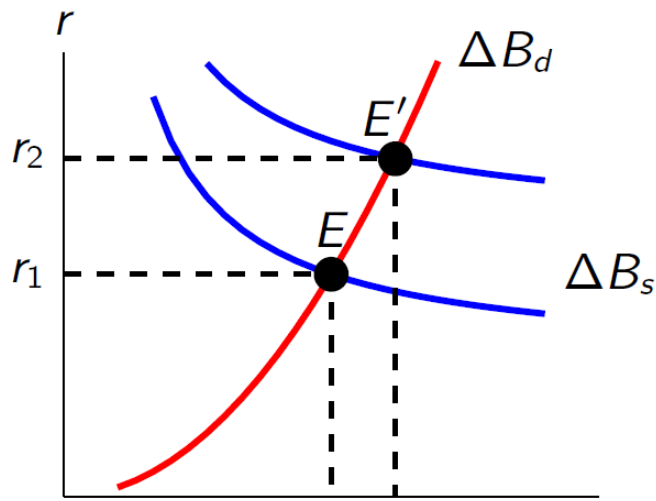
- ❖ **Savers** save more the **higher** the interest rate, i.e., they seek more **securities** (to invest their savings) the **lower** their price;
- ❖ **Borrowers** seek more funds to invest the **lower** the interest rate, i.e., they are willing to **issue more securities** (to obtain funds) the **higher** their price.

And that is why these two graphs are equivalent.



Determination of the Market Rate of Interest (cont.)

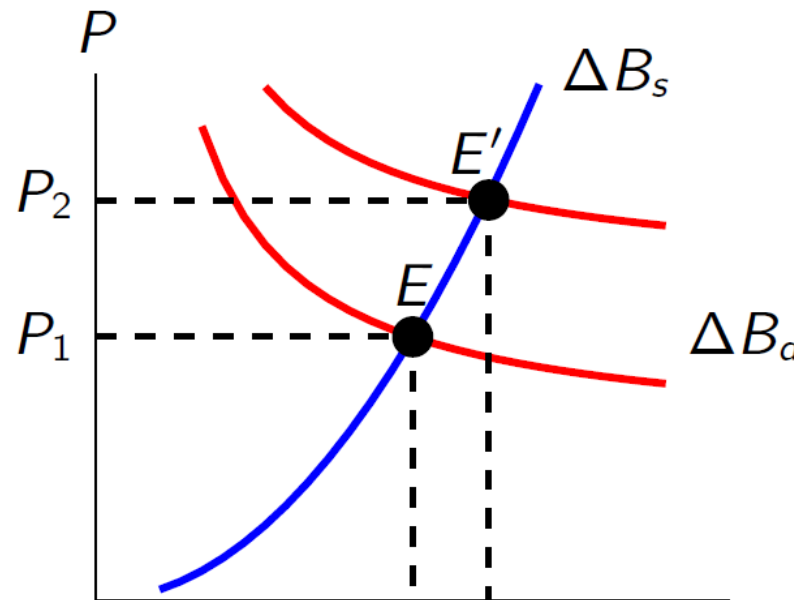
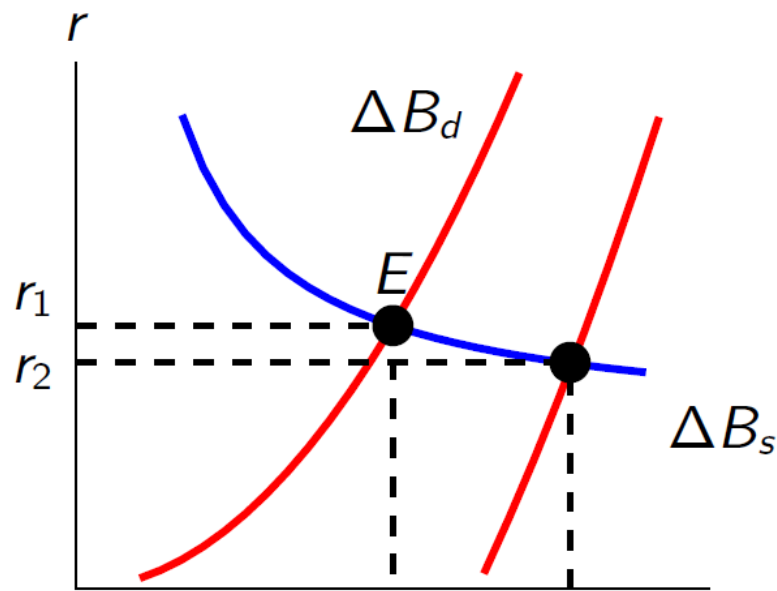
- ▶ Now, we are going to use our framework to establish and derive some conclusions.
- ▶ **First**, consider what happens if there is an **increased desire to invest by firms**.



- ▶ The increase in the flow supply of securities will drive down the price of securities from P_1 to P_2 and drive up the rate of interest from r_1 to r_2 .

Determination of the Market Rate of Interest (cont.)

- Second, consider what happens when there is an increased desire to save by savers.



- The increase in the flow demand of securities will drive up the price of securities from P_1 to P_2 and drive down the rate of interest from r_1 to r_2 .

Determination of the Market Rate of Interest (cont.)

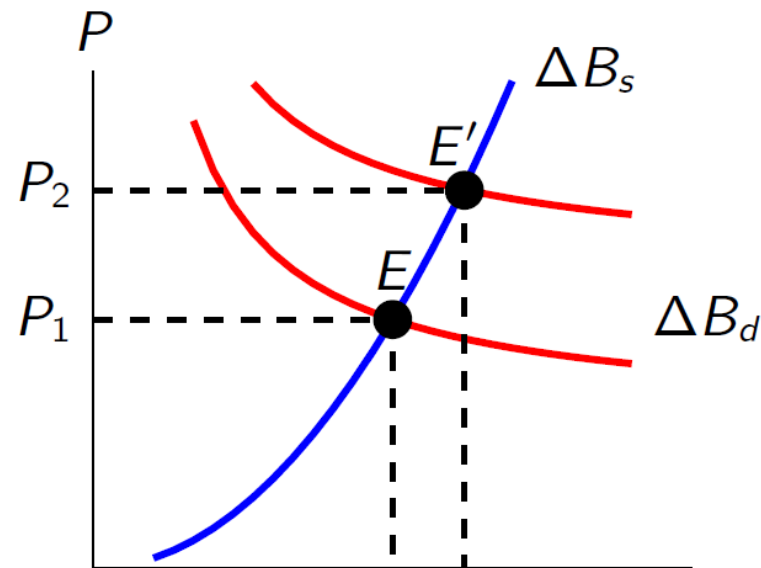
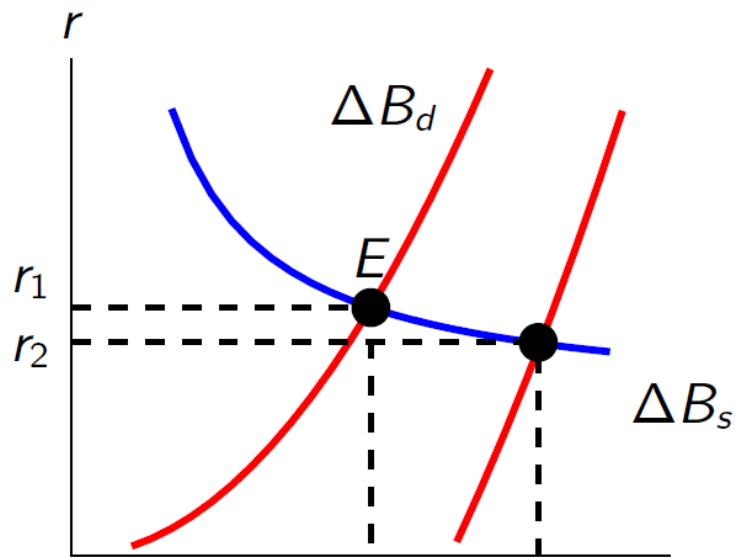
Other factors that may cause a shift in the flow demand for securities include:

- 1) Fluctuations in wealth;**
- 2) Changes in expected future interest rates;**
- 3) Changes in expected inflation;**
- 4) Changes in the attractiveness of securities.**

Among other factors...

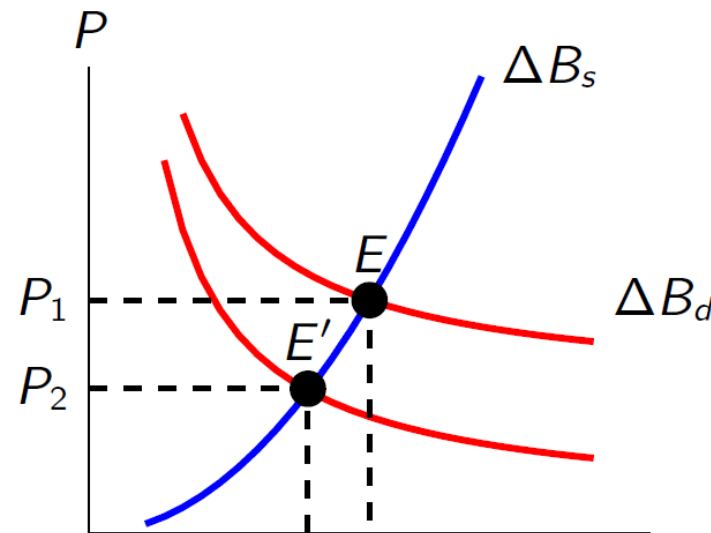
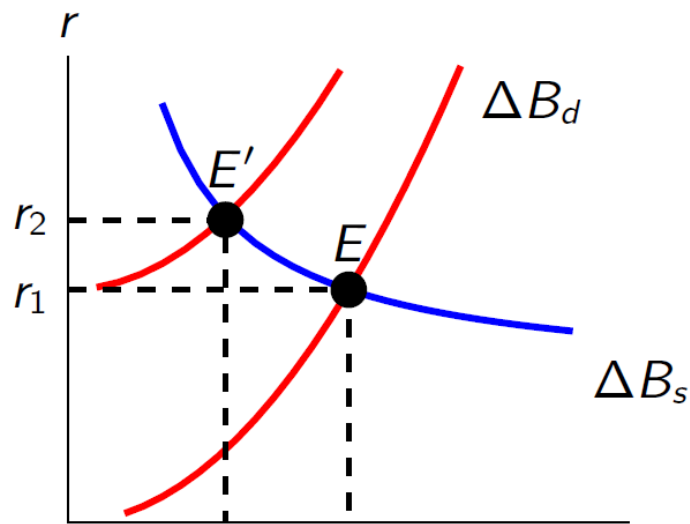
Shifts in the Flow Demand for Securities

- 1) **Fluctuations in wealth**, due to the effects of economic expansion and contraction cycles. This graph shows the effect of an **increase in wealth**.



Shifts in the Flow Demand for Securities (cont.)

- 2) **Changes in expected future interest rates** : if economic agents expect higher interest rates to prevail in future periods, they will also expect bond prices to fall; that is, they will expect capital losses.
- 3) **Changes in expected inflation**: if inflation expectations increase, savers will prefer to invest their wealth in physical goods, and demand for bonds will decline.
- 4) **Changes in the attractiveness of securities**: if bonds become less attractive, for example because their risk increases, then demand for them will decline.



Determination of the Market Rate of Interest (cont.)

- ▶ Other factors that may cause a shift in the **flow supply of securities** include:
 - a) A change in the number of **investment opportunities**;
 - b) Changes in **expected inflation**;
 - c) Changes in how the government finances its **budget deficit**.

Among other factors...

Shifts in the Flow Supply of Securities

- a) A change in the number of investment opportunities: the more profitable investments a firm can undertake, the greater its willingness will be to issue debt securities in order to obtain the funds it needs. Thus, during periods of economic expansion, the supply of securities increases.
- b) Changes in expected inflation: if expected inflation rises, the expected burden of repaying debt becomes smaller, both because the contracted interest rate will be lower relative to the market rate (assuming the bonds carry a fixed interest rate) and because the value of the debt becomes less significant in real terms.
- c) Changes in how the government finances its budget deficit: if governments finance the budget deficit by issuing debt securities, the larger the deficit, the greater the supply of securities.

